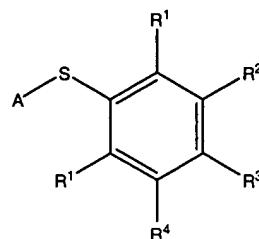


AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A compound of the structure formula I



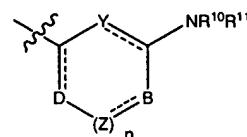
!

or a pharmaceutically acceptable salt or prodrug thereof,

wherein R¹, R², R³, R⁴ and R⁵ are each independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, cyano, nitro, cycloalkyl, carboxaldehyde, and

~~with the proviso that at least one of R¹ or R³ is~~

and a group of formula II defined as



II

and wherein at least one of R¹ or R³ is a pyridine;

wherein D, B, Y and Z at each occurrence are each independently selected from the group consisting of -CR⁶=, -CR⁷R⁸-, -C(O)-, -O-, -SO₂-, -S-, -N=, and -NR⁹-;

n is an integer of zero to three;

R^6 , R^7 , R^8 and R^9 , at each occurrence, are each independently selected from the group consisting of hydrogen, alkyl, carboxy, hydroxyalkyl, alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl; and R^{10} and R^{11} are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxycarbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino; or wherein R^{10} and R^{11} are taken together with N may be joined to form a three to seven membered unsubstituted heterocyclyl or a three to seven membered substituted heterocyclyl ring, said ring being optionally substituted with one or more at least one substituent substituents R^{13} , wherein R^{13} , at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminooalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclsulfonylaminocarbonyl; wherein A is an unsubstituted aryl or group, an unsubstituted heterocyclyl group, a substituted aryl, or a heterocyclyl group substituted with

said aryl or heterocyclyl group having at least one substituent R¹², wherein R¹², at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, aryl, haloalkyl, hydroxy, alkoxy, alkoxyalkyl, alkoxycarbonyl, alkoxyalkoxy, hydroxyalkyl, aminoalkyl, aminocarbonyl, alkyl(alkoxycarbonylalkyl) aminoalkyl, heterocyclyl, heterocyclylalkyl, carboxaldehyde, carboxaldehyde hydrazone, carboxamide, carboxamido, alkoxycarbonylalkyl, carboxy, carboxyalkyl, carboxyalkoxy, hydroxyalkylaminocarbonyl, cyano, amino, heterocyclylalkylamino, carboxythioalkoxy, carboxycycloalkoxy, thioalkoxy, carboxyalkylamino, trans-cinnamyl and heterocyclylalkylaminocarbonyl; and

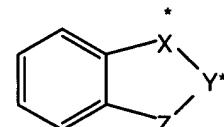
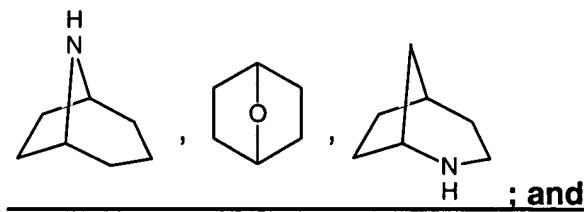
wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹² and R¹³ are unsubstituted or substituted with at least one electron donating or electron withdrawing group;

or a pharmaceutically acceptable salt, optical isomer or prodrug thereof.

wherein the heterocyclyl is selected from 3-, 4-, 5-, 6- and 7-membered rings containing 1-3 heteroatoms independently selected from nitrogen, oxygen and sulfur; the 4- and 5-membered rings have zero to two double bonds and the 6- and 7-membered rings have zero to three double bonds, the heterocyclyl being optionally substituted with alkyl, halogen, hydroxy or alkyl substituents,
further wherein the heterocyclyl optionally comprises a group chosen from:

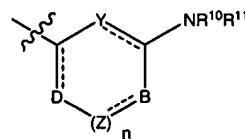
(i) bicyclic, tricyclic, and tetracyclic groups in which any of the above heterocyclic rings is fused to one or two rings independently selected from an aryl ring, a cyclohexane ring, a cyclohexane ring, a cyclopentane ring, a cyclopentene ring, and another monocyclic heterocyclic ring;

(ii) bridged bicyclic groups where a monocyclic heterocyclic group is bridged by alkylene group optionally selected from



(iii) compounds of the formula $\text{C}_6\text{H}_4\text{X}^*\text{Z}^*\text{Y}^*$ where X^* and Z^* are each independently selected from $-\text{CH}_2-$, $-\text{CH}_2\text{NH}-$, $-\text{CH}_2\text{O}-$, $-\text{NH}-$ and $-\text{O}-$, with the proviso that at least one of X^* and Z^* is not $-\text{CH}_2-$, and Y^* is selected from $-\text{C}(\text{O})-$ and $-(\text{C}(\text{R}'')_2)_v-$, where R'' is hydrogen or alkyl of one to four carbons, and v is 1-3.

2. (Currently Amended) A The compound according to of claim 1 wherein R^3 is the group of formula II



II

wherein R¹⁰, R¹¹, D, B, Y₁ and Z, and n are defined as in claim 1; and
R¹ is defined as in claim 1 with the proviso that if R³ does not define
a pyridine, then R¹ is a pyridine. at each occurrence are independently
selected from the group consisting of CR⁶=, CR⁷R⁸-, C(O), O-, SO₂-,
S-, N=, and NR⁹-;

~~n is an integer of zero to three;~~

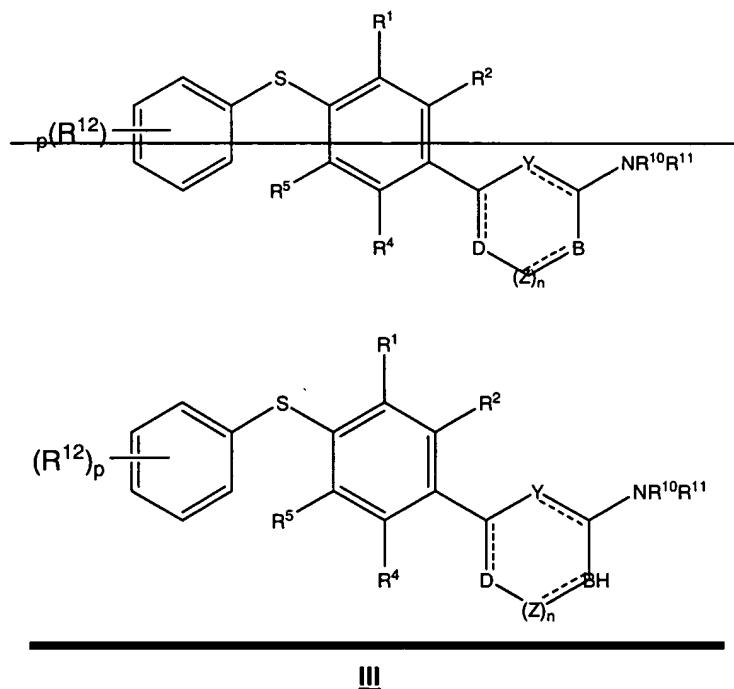
~~R⁶, R⁷, R⁸ and R⁹, at each occurrence, are each independently selected from the~~
~~group consisting of hydrogen, alkyl, carboxy, hydroxyalkyl,~~
~~alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl;~~

~~R¹⁰ and R¹¹ are each independently selected from the group consisting of~~
~~hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxy carbonylalkyl, carboxyalkyl,~~
~~hydroxyalkyl, heterocycl, heterocyclalkyl and heterocyclamino;~~

~~wherein R¹⁰ and R¹¹ may be joined to form a three to seven membered~~
~~heterocycl ring, said ring being optionally substituted with one or more~~
~~substituents R¹³, wherein R¹³ at each occurrence is independently~~
~~selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl,~~
~~cycloalkyl, aryl, heterocycl, heterocyclalkyl, heterocyclcarbonyl,~~
~~heterocyclalkylaminocarbonyl, hydroxy, hydroxyalkyl,~~
~~hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl,~~
~~carboxaldehyde, alkoxycarbonyl, arylalkoxycarbonyl, aminoalkyl,~~
~~aminoalkanoyl, aminocarbonyl, carboxamido, alkoxycarbonylalkyl,~~
~~carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl,~~
~~alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl,~~

sulfonate, alkylsulfonyl, alkylsulfonylamino carbonyl, arylsulfonylamino carbonyl and heterocyclylsulfonylamino carbonyl; R^1 and R^2 are each independently selected from the group consisting of hydrogen, halogen, haloalkyl, and nitro; and R^4 and R^5 are each independently selected from the group of hydrogen and alkyl.

3. (Currently amended) A The compound according to of claim 1 of the structure formula III



wherein R^1 , R^2 , R^4 and R^5 are each independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, cyano, nitro, cycloalkyl, carboxaldehyde;

D , B , Y and Z at each occurrence are independently selected from the group consisting of $CR^6=$, CR^7R^8 , $C(O)$, O , SO_2 , S , $N=$, and NR^9 ;

~~n is an integer of zero to three;~~

~~wherein R⁶, R⁷, R⁸ and R⁹, at each occurrence, are each independently selected from the group consisting of hydrogen, alkyl, carboxy, hydroxyalkyl, alkylaminocarbonyl alkyl, dialkylaminocarbonylalkyl and carboxyalkyl;~~

~~R¹⁰ and R¹¹ are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxy carbonylalkyl, carboxyalkyl, hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;~~

~~wherein R¹⁰ and R¹¹ may be joined to form a three to seven membered heterocycl ring, said ring optionally being substituted with one or more substituents R¹³, wherein R¹³ at each occurrence is independently selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl, cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl, heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl, hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl, carboxaldehyde, alkoxy carbonyl, arylalkoxycarbonyl, aminoalkyl, aminoalkanoyl, aminocarbonyl, carboxamido, alkoxy carbonylalkyl, carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminooalkyl, sulfonate, alkylsulfonyl, alkylsulfonylaminocarbonyl, arylsulfonylaminocarbonyl and heterocyclsulfonylaminocarbonyl;~~

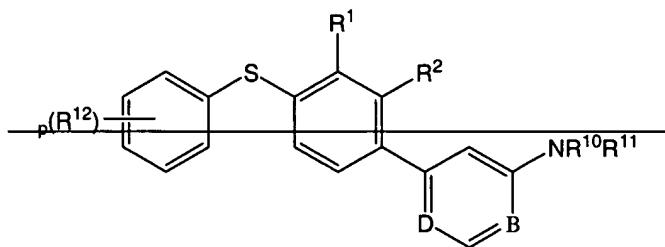
~~R¹², at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocycl; and,~~

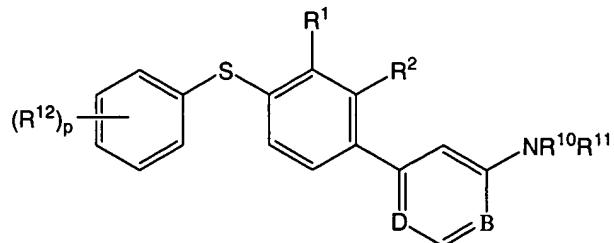
p is an integer of one~~zero~~ to five. [[:]]

~~wherein R¹, R², R⁴, R⁵, R⁶, R¹⁰, R¹¹, R¹² and R¹³ are unsubstituted or substituted with at least one electron donating group or electron withdrawing group.~~

4. (Currently amended) A The compound according to of claim 3 wherein p is one; R⁴ and R⁵ are hydrogen; R¹² is selected from the group consisting of halogen, alkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocycl; and R¹⁰ and R¹¹ are taken together with N joined to form a three to seven membered unsubstituted heterocycl ring, or a three to seven membered substituted heterocycl ring, [[:]] substituted with at least one substituent R¹³ and wherein said substituted heterocycl, or unsubstituted heterocycl ring is selected from the group consisting of piperidine, piperazine, morpholine, pyrrolidine, and azetidine.

5. (Currently amended) A The compound according to of claim 1 of the structure formula IV





IV

wherein D and B are each independently selected from the group consisting of

-N= and -CR⁶=;

R¹ is selected from hydrogen, halogen and haloalkyl, with the proviso that

if R³ does not define a pyridine, then R¹ is a pyridine;

~~R¹ and R² are each independently is selected from the group consisting of~~

hydrogen, halogen and haloalkyl;

~~R¹⁰ and R¹¹ are each independently selected from the group consisting of~~

hydrogen, alkyl, cycloalkyl, alkoxyalkyl, alkoxy carbonylalkyl, carboxyalkyl,

hydroxyalkyl, heterocyclyl, heterocyclylalkyl and heterocyclylamino;

wherein R¹⁰ and R¹¹ may be joined to form a three to seven membered

heterocyclyl ring, said ring optionally substituted with one or more

substituents R¹³, wherein R¹³ at each occurrence is independently

selected from the group consisting of alkyl, alkylene, alkoxy, alkoxyalkyl,

cycloalkyl, aryl, heterocyclyl, heterocyclylalkyl, heterocyclylcarbonyl,

heterocyclylalkylaminocarbonyl, hydroxy, hydroxyalkyl,

hydroxyalkoxyalkyl, carboxy, carboxyalkyl, carboxycarbonyl,

carboxaldehyde, alkoxy carbonyl, arylalkoxycarbonyl, aminoalkyl,

aminoalkanoyl, aminocarbonyl, carboxamido, alkoxy carbonylalkyl,

~~carboxamidoalkyl, cyano, tetrazolyl, alkanoyl, hydroxyalkanoyl, alkanoyloxy, alkanoylamino, alkanoyloxyalkyl, alkanoylaminoalkyl, sulfonate, alkylsulfonyl, alkylsulfonylamino, carbonyl, arylsulfonylamino, carbonyl and heterocyclylsulfonylamino, carbonyl;~~
~~R¹², at each occurrence, is independently selected from the group consisting of hydrogen, halogen, alkyl, haloalkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and [[:]]~~

p is an integer of ~~one~~ zero to five, [[:]]

~~wherein R¹, R², R¹⁰, R¹¹, R¹² and R¹³ are unsubstituted or substituted with at least one electron donating group or electron withdrawing group.~~

6. (Currently amended) **A** The compound according to of claim 5 wherein p is one; R¹² is selected from the group consisting of halogen, alkyl, alkoxy, carboxyalkoxy, carboxyalkyl and heterocyclyl; and R¹⁰ and R¹¹ are taken together with N joined to form a three to seven membered substituted heterocyclyl ring, or a three to seven membered unsubstituted heterocyclyl ring, [[:]] substituted with at least one substituent R¹³, wherein R¹³ is defined as in claim 1, and wherein said substituted heterocyclyl ring, or unsubstituted heterocyclyl ring is selected from the group consisting of piperidine, piperazine, morpholine, pyrrolidine, and azetidine.

7. (Currently amended) **A** The compound according to of claim 1, selected from the group consisting of 1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidine-3-carboxylic acid, 4-(4-(2-isopropyl-phenylsulfanyl)-3-

trifluoromethyl-phenyl)-6-(3-(2H-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, 4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-6-(4-(2H-tetrazol-5-yl)-piperidin-1-yl)-pyrimidine, (1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-3-yl)-methanol, 2-(1-(6-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyrimidin-4-yl)-piperidin-4-yl)-ethanol, *N*-(1-(4-(4-(2-isopropyl-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidin-3-yl)-acetamide, 1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-ol, *N*-1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-yl)-acetamide, *N*-1-(4-(4-(2-methoxy-phenylsulfanyl)-3-trifluoromethyl-phenyl)-pyridin-2-yl)-pyrrolidine-3-yl)-acetamide, *N*-(1-(4-(4-(2,3-dihydro-benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl) pyridin-2-yl)-pyrrolidin-3-yl)-acetamide, 4'-(4-(2,3-dihydro-benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl)-3,4,5,6-tetrahydro-2H-(1,2')bipyridinyl-4-carboxylic acid, and 4'-(4-(2,3-dihydro-benzo(1,4)dioxin-6-ylsulfanyl)-3-trifluoromethyl-phenyl)-3,4,5,6-tetrahydro-2H-(1,2')bipyridinyl-3-carboxylic acid.

8. (Currently amended) A composition comprising:

a compound according to of claim 1

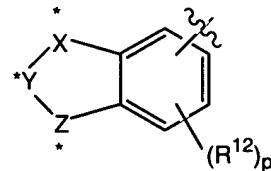
and in a pharmaceutically acceptable carrier.

9. (Currently amended) A method of inhibiting inflammation or suppressing immune response in a mammal comprising administering to said mammal a therapeutic amount of a compound according to of claim 1.

10. (New) A compound according to claim 1 wherein A is

(i) an unsubstituted or substituted aryl group, substituted by at least one substituent R¹², wherein R¹² is defined as in claim 1, or

(ii) an unsubstituted or substituted heterocycl group of the formula



wherein

R¹² is defined as in claim 1;

p is an integer of one to three;

X* and Z* are each independently selected from -CH₂-, -CH₂NH-, -CH₂O-, -NH-, and -O-, with the proviso that at least one of X* and Z* is not -CH₂-, and

Y* is -(C(R")₂)_v-, wherein

R" is hydrogen or alkyl; and

v is 1, 2, or 3.

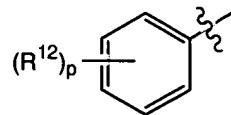
11. (New) A compound according to claim 1 or 10 wherein A is an unsubstituted or substituted aryl group, wherein the aryl group is

(i) a mono- or a bicyclic carbocyclic ring system having one or two aromatic rings, or

(ii) a mono- or a bicyclic carbocyclic ring system having one or two aromatic rings,

wherein one or more than one of the aromatic rings is fused to a ring selected from cyclohexane, cyclohexene, cyclopentane, and cyclopentene.

12. (New) A compound according to claim 1 wherein A is an unsubstituted or substituted aryl group of the formula



wherein R^{12} is defined as in claim 1; and p is an integer of one to five.

13. (New) A compound according to claim 1 wherein

D is $CR^6=$ or $-N=$,

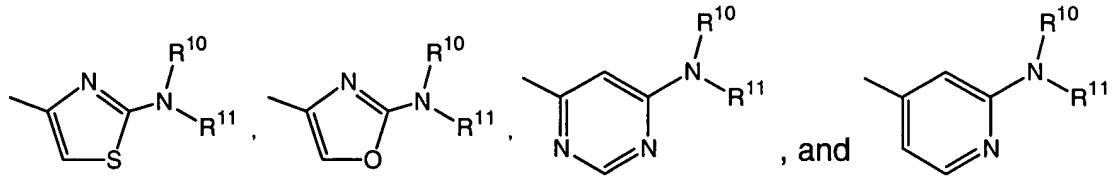
B is $-S-$, $-O-$, $-CR^6=$ or $-N=$,

Y is $-CR^6=$ or $-N=$,

Z is $-CR^6=$ or $-N=$; and

n is zero or one.

14. (New) A compound according to claim 1 wherein R^3 is selected from



15. (New) A compound according to claim 1 wherein R^1 or R^3 is a group of formula II
wherein

D is $-CR^6=$;

B is $-O-$ or $-S-$;

Y is $-N=$; and

n is zero.

16. (New) A compound according to claim 1 wherein

D is $CR^6=$ or $-N=$;

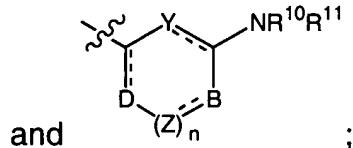
B is $-N=$;

Y is $CR^6=$; and

n is one.

17. (New) A compound according to claim 1 wherein

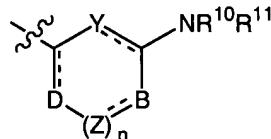
R^1 is selected from hydrogen, halogen, alkyl, nitro,



R^2 is selected from hydrogen, halogen, alkyl, and nitro;

R^4 and R^5 are each independently selected from hydrogen and alkyl; and

R^3 is



wherein

D is $-CR^6=$ or $-N=$,

B is $-S-$, $-O-$, $-CR^6=$ or $-N=$,

Y is $-CR^6=$ or $-N=$,

Z is $-CR^6=$ or $-N=$; and

n is zero or one.

18. (New) A compound according to claim 1 wherein

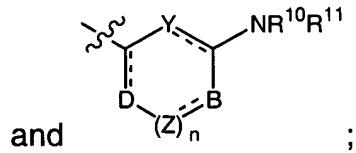
R^1 and R^2 are each independently selected from hydrogen, halogen, and haloalkyl;

R^3 is a pyridine; and

R^4 and R^5 are each hydrogen.

19. (New) A compound according to claim 1 wherein

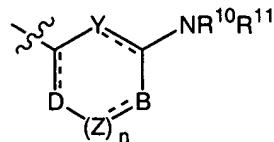
R^1 is selected from hydrogen, halogen, haloalkyl,



R^2 is selected from hydrogen, halogen, and haloalkyl;

R^4 and R^5 are each hydrogen; and

R^3 is



wherein

D is $-CR^6=$ or $-N=$,

B is $-S-$, $-O-$, $-CR^6=$ or $-N=$,

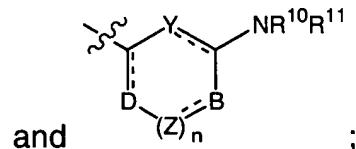
Y is $-CR^6=$ or $-N=$,

Z is $-CR^6=$ or $-N=$; and

n is zero or one.

20. (New) A compound according to claim 1 wherein

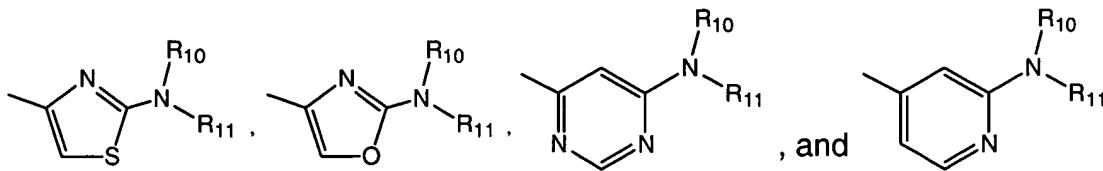
R^1 is selected from hydrogen, halogen, haloalkyl,



R^2 is selected from hydrogen, chloro, and trifluoromethyl;

R^4 and R^5 are each hydrogen; and

R^3 is selected from



21. (New) A compound according to claim 1 wherein R⁶ is hydrogen.

22. (New) A compound according to claim 1 wherein

R¹ is selected from hydrogen, halogen, and haloalkyl,

R² is selected from hydrogen and halogen,

R³ is a pyridine, and

R⁴ and R⁵ are each hydrogen.

23. (New) A compound according to claim 22 wherein

R¹ is trifluoromethyl,

R² is hydrogen, and

R³ is a pyridine.

24. (New) A compound according to claim 22 wherein R¹ and R² are each chloro, and R³ is a pyridine.

25. (New) A compound according to claim 1 which has an IC₅₀ of less than 20 μ M when tested in one or both of

(i) an ICAM-1/LFA-1 Biochemical Interaction Assay, or

(ii) an ICAM-1/JY-8 Cell Adhesion Assay

26. (New) A method for ameliorating a pathology in a mammal arising from the interaction of LFA-1 with ICAM-1 or ICAM-3 comprising administering to said mammal a therapeutic amount of a compound according to claim 1.

27. (New) A method according to claim 26 wherein the pathology is selected from an inflammatory disease, an autoimmune disease, tumor metastasis, allograft rejection and reperfusion injury.